

## PATENT COOPERATION TREATY

PCT

REC'D 27 FEB 2006
WIPO
PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY  
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P04E7037PCT	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. <b>PCT/KR2004/002654</b>	International filing date (day/month/year) <b>15 OCTOBER 2004 (15.10.2004)</b>	Priority date (day/month/year) 16 OCTOBER 2003 (16.10.2003)
International Patent Classification (IPC) or national classification and IPC <b>H01Q 13/08(2006.01)i</b>		
<p>Applicant <b>ELECTRONICS AND TELECOMMUNICATIONS RESEARCH INSTITUTE et al</b></p>		
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>3</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>		

Date of submission of the demand <b>28 APRIL 2005 (28.04.2005)</b>	Date of completion of this report <b>03 FEBRUARY 2006 (03.02.2006)</b>
Name and mailing address of the IPEA/KR  Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer JEON, Ki Eock Telephone No. 82-42-481-5714



## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/KR2004/002654

## Box No. I Basis of the report

- With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
 

This report is based on translations from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:
 
  - international search (under Rules 12.3 and 23.1(b))
  - publication of the international application (under Rule 12.4)
  - international preliminary examination (under Rules 55.2 and/or 55.3)
- With regard to the elements of the international application, this report is based on (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):
 

the international application as originally filed/furnished

the description:  
pages \_\_\_\_\_ as originally filed/furnished  
pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

the claims:  
pages \_\_\_\_\_ as originally filed/furnished  
pages\* \_\_\_\_\_ as amended (together with any statement) under Article 19  
received by this Authority on \_\_\_\_\_  
pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

the drawings:  
pages \_\_\_\_\_ as originally filed/furnished  
pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

the sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.
- The amendments have resulted in the cancellation of:
 

the description, pages \_\_\_\_\_  
 the claims, Nos. \_\_\_\_\_  
 the drawings, sheets \_\_\_\_\_  
 the sequence listing (specify) : \_\_\_\_\_  
 any table(s) related to sequence listing (specify) : \_\_\_\_\_
- This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 

the description, pages \_\_\_\_\_  
 the claims, Nos. \_\_\_\_\_  
 the drawings, sheets \_\_\_\_\_  
 the sequence listing (specify) : \_\_\_\_\_  
 any table(s) related to sequence listing (specify) : \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

International application No.

PCT/KR2004/002654

**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims	1-5	YES
	Claims	None	NO
Inventive step (IS)	Claims	2-5	YES
	Claims	1	NO
Industrial applicability (IA)	Claims	1-5	YES
	Claims	None	NO

**2. Citations and explanations (Rule 70.7)****1. Reference is made to the following documents :**

D1 : US 2003/0038750 A1 (2003.2.27)

D2 : JP 2003092510 A (2003.3.28)

The present invention is related to indented planar inverted F-type antenna. And key idea of claim 1 is that the first radiation patch is asymmetrical shape of linearly tapered rectangle and has one and more corrugated hollows.

D1 describes indented planar inverted F-type antenna. In details, we can see a flat metal plate(22) of crenellated shape to reduce the antenna size in figure 2. But metal plate(22) of D1 is not an asymmetrical shape of linearly tapered.

D2 is related to plate-shaped inverted F-type antenna and radio communication equipment. In figures 11~12 of D2, an ordinary inverted F type antenna(1) has a taper-노매ed conductor(61a) and a cutting pattern(16). And a cutting pattern(16) is not more than one.

However, claim 1 of this invention lacks an inventive step under PCT article 33(3) as being anticipated by D1 and D2. Therefore, claims 1 would have been obvious to a person skilled in the arts of waveguide system at the time of invention by above documents.

**2. Industrial applicability**

Claims 1-5 meet the criteria of PCT Article 33(4) because it can be used in mobile communication industry.